Kalendarium Nauticum:

THE SEA-MAN'S

ALMANACK,

For the Year of Christ, 1675.

And the Third after Bissextile, or Leap-year.

Comprising not onely what is generally contained in Annual Almanacks, but accommodated with such Precepts, Rules and Tables, as are of daily use in the Practise of

NAVIGATION and TRAFFICK.

Principally referred to the

Meridian of LONDON.

With Directions how it may become useful in any part of the World, but more especially to

England, *Scotland*, and *Ireland*.

By HENRY SEAMAN, Mariner.

London, Printed by *T. N.* for the Company of Stationers. 1675.

The Common Notes and Moveable Feasts, for three Years past and Four Years to come, viz. from Anno 1672, to 1679, in both the English and Foreign Accounts.

Year of our Lo.	Gol. N.	Epact	Sunday Letter	Shrove Sunday	Easter day	Whit-sunday	Whit-sunday	Easter day	Sunday Letter
			English Account.					Foreign Acc.	
1672	1	11	GA	Fe. 18	Apr. 7	Ma. 26	Jun. 5	Ap. 17	CB
1673	2	22	E	10	Ma. 30	19	Ma. 21	2	A
1674	3	3	D	Mar. 1	Ap. 19	June 7	Ju. 10	22	G
1675		14	C	Fe. 14	Ap. 4	Ma. 23	Jun. 2	Ap. 14	F
1676	5	25	BA	6	Ma. 26	14	Ma. 24	5	ED
1677	6	6	G	Fe 25	Ap. 15	Jun. 3	Jun. 6	18	C
1678	7	17	F	Fe. 10	Ma. 31	Ma. 19	Ma. 29	10	B

The Terms, and their Returns.

Hillary Term begins Jan. 23. *ends* Febr. 12.

Octab. Hil. Jan. 21.
Quind. Hill. Jan. 23.
Craſt. Puriſ. Feb. 3.
Octab. Puriſ. Feb. 10.

Trinity Term begins June 4. *ends* June 23.

Craſt. Trin. May 31.
Octab. Trin. June 7.
Quind. Trin. June 14.
Treſ. Trin. June 21.

Eaſter Term begins Apr. 21. *ends* May 17.

Quind. Paſch. Apr. 19.
Treſ. Paſch. Apr. 26.
Menſ. Paſch. May. 3.
Quinq. Paſch. May 10.
Craſt Aſcen. May 14.

Michaelmas Term begins Octob. 23. *ends* Nov. 28.

Craſt. Mich. Octab. 20.
Menſ. Mich. Octab. 27.
Craſt. Anim. Nov. 3.
Craſt. Mart. Nov. 13.
Octab. Mart. Nov. 19.
Quind. Mart. Nov. 26.

Of the Four Quarters of the Year.

SPRING begins the 10 of March, two min. before 10 in the Forenoon.

SUMMER begins the 11 of June, 50 min. after Midnight.

AUTUMN begins the 13 of September, 17 min. after 4 in the Morning.

WINTER begins the 11 of December, at 2 of the clock in the Morning.

Of

Of the Eclipſes this Year, 1675.

THe *Luminaries* will be five times *Eclipſed* this Year, the *Sun* twice, and the *Moon* three times.

The *firſt* is of the *Moon*, on the firſt of *January*; it will begin at 34 min. after 5 at night, and will continue till 24 min. after 9. it will be a *total Eclipſe*, and will be conſpicuous to us in *England*. But thoſe that inhabit *Tartaria*, *Arabia Felix*, *Perſia*, &c. will ſee it upon their *Meridian*; but to us it will appear in the South East Quarter of the Heavens.

The *ſecond Eclipſe* is of the *Sun*, upon the 13. day of *June*, at a quarter after 5 in the morning; it may (in part) be ſeen of us, but will be more conſpicuous to the Inhabitants of *Spain*, *Italy*, &c.

The *third Eclipſe* will be of the *Moon*, upon the 27 of *June*. the beginning will be at 37 min. after 1. in the morning, and will continue till 47 min. after 3. all the beginning may be ſeen, but the end cannot, for that the *Sun* Riſes before the *Eclipſe* be ended.

The *fourth* is of the *Sun*, the 6 of *December*, at Sun-ſetting, and ſo not to be ſeen of us.

The *Laſt* is of the *Moon* on the 22 of *December*, at 3 in the morning; it will be but a very ſmall *Eclipſe*, and ſcarcely (without a good *Teleſcope*) perceptible.

A Table to find the time of the Tides in the chiefeſt *Ports*, in and near the King'om of *England*.

The Moon is South at

Days after the Change and Full							
0	1	2	3	4	5	6	7
12	12 48	1 36	2 24	3 12	4 00	4 48	5 36

Days after either of the Quarters at							
0	1	2	3	4	5	6	7
6	6 48	7 36	8 24	9 12	10 0	10 48	11 36

h. qua	Southamton. Portſm. Quinborough, Wellings.	
0. 3.	Rye, Calis, Calſhot, Winchelſey, Gorend.	
1. 2.	Dover, Harwich, Wight, Yarmouth, Bulloign.	
2. 1.	Needles, Deep, Casket, Lux, Lenow, Orf. Layſt.	
3. 0.	Orkny-pool, Orwel, S. Hel. Flee, Eams, Emden.	
3. 3.	Portland, Peter p. Hareſtew, Hogue, Blanchey.	
4. 2.	Milford, Bridgewater, N. coaſt, Exwater, Texel.	
5. 1.	Briſtow, Lanion, Foulneſs.	
6. 0.	Lin, Humb. Waymouth, Primm. Antw.	6 heu.
Aberden, Redban, Rocheſter, Malden, W. of N.		0. 3.
Graveſend, Downs, Romney, Tenet, Rainkins.		1. 2.
Dundee, S. Andr. Lisbon, Silly, Maz, S. Lucas.		2. 1.
London, Timm. Hartlep. Amſterd. Glaſgoign.		3. 0.
Barwick, Oſtend, Scarb. Fount, Flambor. Flush.		3. 1.
Frith, Leith. Dunb. Lawr. Bloy, Month. Egmont.		4. 2.
Falmoth, Foy, Garnſey, Severn-m. Waterford.		5. 1.

When you have found by the Almanack, & the utmoſt Table the day the Moon is at S. then look for the Haven or Port you deſire; and if the hours and quarters ſtand before the Port, there it is High-water ſo many hours & quarters before the Moon comes at South: But if the hours and quarters ſtand after the Port, there it is High water ſo long after the Moon is at South.

As for Example.

By the firſt Tables you find, the Moon is South at 4 a clock, 5 days after the Change, which ſhews it is at that time Full Sea at Portſmouth &c. at Dover, Harwich, &c. an hour and half ſooner, *viz.* at 2 a clock and 30 minutes: But at London, Timmouth, &c. 3 hours after, *viz.* at 7 a clock.

January hath 31 days. 1675.

Full Mo.	1 d.	7 h.	22 m.	N	The	22 d. Satu	Is with the Moon.
Last Qu.	8	6	23	N		11 d. Jup	
New Mo.	15	9	36	N		24 d. Mar	
First Qu.	25	0	34	M		17 d. Ven	
Full Mo.	31	9	00	M		14 d. Mer	

1	a	N. years day		Canc.	17	21	48	4	25	11	d
2	b	7 59	4 1	Leo	1	21	38	4	21	12	e
3	☾	7 58	4 2		16	21	28	4	17	13	[illegible]
4	d	7 57	4 3	Virgo	0	21	18	4	13	14	g
5	e	7 56	4 4		14	21	7	4	9	15	a
6	f	Twelfth day			29	20	55	4	4	16	b
7	g	7 53	4 7	Libra	1[illegible]	20	43	4	0	17	c
8	a	Lucian			2[illegible]	20	31	3	56	18	d
9	b	7 50	4 10	Scorp.	12	20	18	3	51	19	e
10	☾	Sun in Aqu.			25	20	5	3	47	20	[illegible]
11	d	7 48	4 12	Sagit.	9	19	51	3	43	21	g
12	e	7 46	4 14		22	19	37	3	38	22	a
13	f	Hillary B.		Capric	5	19	23	3	34	23	b
14	g	Wed. com. in			18	19	9	3	30	24	c
15	a	7 41	4 19	Aquar.	1	18	54	3	26	25	d
16	b	7 40	4 20		14	18	39	3	22	26	e
17	☾	2. aft. Epiph.			26	18	23	3	18	27	[illegible]
18	d	7 37	4 23	Pisces	0	18	7	3	14	28	g
19	e	7 35	4 25		20	17	51	3	10	29	a
20	f	Fabian		Aries	2	17	35	3	6	30	b
21	g	Agnes			19	17	18	3	2	31	c
22	a	Vincent			26	17	1	2	57	[illegible]	
23	b	Term begins		Taurus	8	16	43	2	53	2	e
24	☾	3. aft. Epiph.			29	16	25	2	59	3	[illegible]
25	d	Conv. S. Paul		Gemini	2	16	7	2	45	4	g
26	e	7 23	4 36		15	15	49	2	41	5	a
27	f	7 22	4 38		28	15	31	2	37	6	b
28	g	7 20	4 40	Canc.	11	15	12	2	33	7	c
29	a	7 18	4 42		25	14	43	2	29	8	d
30	b	K. Ch. I Mar.		Leo	10	14	33	2	25	9	e
31	☾	Septuages.			24	14	14	2	22	10	[illegible]

Suns Declination, South, Decreasing.

Complement of the Suns Right Ascension at Mi night.

February hath 28 days. 1675.

	d.	h.	m.			
Last Qu.	6	11	00 N	18 day Saturn	Is with the Moon.	
New Mo.	14	3	4 P.M	8 day Jupit.		
First Qu.	22	7	0 N	22 day Mars		
				13 day Venus		
				15 day Mercu.		

Mon.	Week.	Fix. & Mov. Feasts. ☽ R.	☉ S.	The Sign the Moon is in.	The ☉ Declination.		Compl. ☽ Right Ascen.		For Aspects.
1	D			Virgo	9	13 54	2	18	11
2	E				24	13 34	2	14	12
3	F	7 9	4 51	Libra	9	13 13	2	10	13
4	G	7 7	4 53		24	12 53	2	6	14
5	A	Agathe		Scorp.	00	12 33	2	2	15
6	B	7 3	4 57		22	12 12	1	58	16
7	C			Sagit.	6	11 51	1	54	17
8	D				19	11 30	1	50	18
9	E	6 57	5 3	Capr.	2	11 8	1	46	19
10	F	6 55	5 5		15	10 46	1	43	20
11	G	6 53	5 7		28	10 24	1	39	21
12	A			Aqua.	10	10 13	1	35	22
13	B	6 49	5 11		22	9 41	1	31	23
14	C			Pisces	5	9 19	1	27	24
15	D	6 46	5 14		17	8 56	1	24	25
16	E	Shrov. Tuef.			29	8 33	1	20	26
17	F	Ash Wednef		Aries	11	8 11	1	16	27
18	G	6 40	5 20		22	7 48	1	12	28
19	A	6 38	5 22	Taur.	4	7 25	1	8	
20	B	6 36	5 24		16	7 3	1	5	2
21	C				28	6 40	1	1	3
22	D	6 32	5 28	Gem.	11	6 26	0	57	4
23	E	6 30	5 30		23	5 53	0	54	5
24	F			Canc.	5	5 30	0	50	6
25	G				20	5 6	0	47	7
26	A	6 24	5 36	Leo	3	4 43	0	43	8
27	B	6 22	5 38		18	4 19	0	39	9
28				Virgo	3	3 56	0	35	10

Complement of the Suns Right Ascension at Midnight.

Suns Declination, South, Decreasing.

March hath 31 days. 1675.

Full Mo.	1 d.	5 h.	17 m.	N.	18 day Sat.
Laſt Qu.	8	8	53	M.	7 day Jup.
New Mo.	16	8	50	M.	23 day Mar.
Firſt Qu.	24	9	30	M.	12 day Ven.
Full Mo.	31	2	00	M.	17 day Mer.

is with the Moon.

1	d	David B.		Virgo	14	3	33	0		33	11	g
2	e	Chad.		Libra	3	3	9	0	0	28	12	a
3	f	6 14	5 46		19	2	45	0	0	24	13	b
4	g	6 12	5 48	Sco pio	3	2	21	0	0	21	14	c
5	a	6 10	5 50		18	1	58	0	0	17	15	d
6	b	6 8	5 52	Sagit.	2	1	34	0	0	14	16	e
7	c	Peculi			16	1	10	0	0	10	17	f
8	d	6 4	5 56		29	0	47	0	0	7	18	g
9	e	6 2	5 58	Capr.	12	0	23	0	0	3	19	a
10	f	Sun in Aries			25	0	1	11		59	20	b
11	g	S. Gregory		Aquar.	7	0	24	11		55	21	c
12	a	5 56	6 4		19	0	* 48	11		52	22	d
13	b	5 54	6 6	Pilces	2	1	12	11		48	23	e
14	c	Lætare			14	1	35	11		45	24	f
15	d	5 50	6 10		25	1	39	11		41	25	g
16	e	5 48	6 12	Aries	7	2	23	11		37	26	a
17	f	5 46	6 14		19	2	46	11		34	27	b
18	g	Edward		Taurus	1	3	10	11		30	28	c
19	a	5 44	6 16		13	3	33	11		27	29	d
20	b	Benedictus			25	3	56	11		23	30	e
21	c	Iuſtus		Gemin.	7	4	19	11		19	31	f
22	d	5 36	6 24		20	4	43	11		16	April	
23	e	5 34	6 26	Canc.	2	5	6	11		12	2	a
24	f	5 32	6 28		15	5	29	11		5	3	b
25	g	Lady day			28	5	52	11		8	4	c
26	a	5 28	6 32	Leo	12	6	14	11		1	5	d
27	b	5 26	6 34		26	6	37	10		57	6	e
28	c	Palm Sunda		Virgo	11	7	(	10		54	7	f
29	d	5 22	6 38		26	7	2.	10		50	8	g
30	e	5 20	6 40	Libra	11	7	43	10		46	9	a
31	f	5 18	6 42		27	8	5	10		43	10	b

Complement of the Suns Right Aſcenſion at Midnight.

Suns Declination, North, increaſing.

Suns Declin. South, decreaſ.

	d.	h.	m.				
Last Qu.	6	10	34	N.	14 day Satu.	4 day Jup.	is with
New Mo.	15	1	30	M.	20 day Mars		the
First Qu.	22	8	11	N.	10 day Ven.		Moon.
Full Mo.	29	11	12	A. M.	14 day Mer.		

1	g	5	16	6	44	Scorp.	12	8	29	10	39	11	c
2	a	5	14	6	46		27	8	51	10	35	12	d
3	b	5	12	6	48	Sagit.	11	9	12	10	31	13	e
4	C	Easter day					25	9	34	10	27	14	f
5	d	5	8	6	52	Capr.	8	9	56	10	24	15	g
6	e	5	6	6	54		21	10	17	10	20	16	a
7	f	5	4	6	56	Aqua.	4	10	38	10	16	17	b
8	g	5	3	6	57		16	10	59	10	13	18	c
9	a	5	1	6	59		28	11	20	10	9	19	d
10	b	Sun in Taur.				Pisces	10	11	40	10	6	20	e
11	C	Low Sunday					22	12	00	10	2	21	f
12	d	Wednes in				Aries	4	12	21	9	58	22	g
13	e	4	54	7	6		16	12	41	9	54	23	a
14	f	4	52	7	8		28	13	00	9	50	24	b
15	g	4	50	7	10	Taurus	10	13	20	9	47	25	c
16	a	4	48	7	12		22	13	39	9	43	26	d
17	b	4	47	7	13	Gem.	4	13	58	9	39	27	e
18	C	Misericordia					17	14	17	9	35	28	f
19	d	4	43	7	17		29	14	35	9	31	29	g
20	e	4	41	7	19	Canc.	12	14	55	9	28	30	a
21	f	Termi begins					25	15	13	9	24	May	
22	g	4	38	7	22	Leo	8	15	31	9	20	2	c
23	a	St. George					22	15	49	9	16	3	d
24	b	4	35	7	29	Virgo	6	16	36	9	12	4	e
25	C	St. Mark Ev.					20	16	23	9	9	5	f
26	d	4	31	7	29	Libra	5	16	40	9	5	6	g
27	e	4	29	7	31		19	16	57	9	1	7	a
28	f	4	28	7	32	Scorp.	5	17	13	8	57	8	b
29	g	4	26	7	34		20	17	29	8	53	9	c
30	a	4	25	7	35	Sagit.	5	17	45	8	50	10	d

Suns Declination North, increasing. Complement of the Suns Right Ascension at Midnight.

	d.	h.	m.		
Last Qu.	6	1	15	P.M.	12 day Satu. 28 day Jup. is with
New Mo.	14	4	27	P.M.	18 day Mars the
First Qu.	22	2	21	M.	10 day Ven. Moon.
Full Mo.	28	6	18	N.	13 day Mer.

1	b	S. Ph. & Jac.	Sagit.	19	18	00	8	46	11	e
2	c	Cantate	Capr.	3	18	15	8	42	12	f
3	d	Inv. Crucis		17	18	30	8	38	13	g
4	e	4	18	7	42	Aqua.	0	18	45	8	34	14	a
5	f	4	16	7	44		13	18	59	8	30	15	b
6	g	Joh. Port. L.		25	19	13	8	26	16	c
7	a	4	14	7	46	Pisces	7	19	27	8	22	17	d
8	b	Veding. ode		19	19	40	8	18	18	e
9	c	Rogation S.	Aries	1	19	53	8	14	19	f
10	d	4	9	7	51		13	20	6	8	10	20	g
11	e	4	8	7	52		25	20	18	8	6	21	a
12	f	4	6	7	54	Taurus	7	20	30	8	2	22	b
13	g	Ascension d.		19	20	41	7	58	23	c
14	a	Boniface	Gemini	1	20	53	7	54	24	d
15	b	4	4	7	56		14	21	4	7	50	25	e
16	c	Exaudi		26	21	14	7	46	26	f
17	d	Term. ends	Cancer	9	21	24	7	42	27	g
18	e	4	1	7	59		21	21	34	7	38	28	a
19	f	Dunstan	Leo	5	21	44	7	34	29	b
20	g	3	59	8	1		19	21	53	7	30	30	c
21	a	Helen Q.	Virgo	2	22	0	7	26	31	d
22	b	3	56	8	4		16	22	9	7	22	June	e
23	c	Whitsunday	Libra	0	22	17	7	18	2	f
24	d	3	55	8	5		15	22	26	7	14	3	g
25	e	3	54	8	6		29	22	31	7	10	4	a
26	f	Ember w.	Scorp.	14	22	35	7	6	5	b
27	g	3	52	8	8		29	22	45	7	2	6	c
28	a	3	52	8	8	Sagit.	13	22	51	6	58	7	d
29	b	K. Ch. H. ns		27	22	57	6	54	8	e
30	c	Trin. Sunda.	Capr.	11	23	2	6	49	9	f
31	d	Weddings in		25	23	7	6	45	10	g

Suns Declination, North, Increasing.

Complement of the Suns Right Ascension at Midnight.

June hath 30 days. 1675.

	d.	m.		
Last Qu.	5	5	Mor.	9 day Satu. / 24 day Jup.
New Mo.	13	5	Mor.	17 day Mar.
First Qu.	20	8	Mor.	10 day Ven.
Full Mo.	27	3	Mor.	13 day Mer.

is with the Moon.

1	e	3 49	8 11	Aqua.	8	23	11	6	41	11	a
2	f	3 49	8 11		21	23	15	6	37	12	b
3	g	Corpus Chr.		Pisces	3	23	18	6	33	13	c
4	a	Term begins			15	23	21	6	29	14	d
5	b	Boniface			27	23	24	6	24	15	e
6	☾	1 after Trin.		Aries	9	23	27	6	20	16	f
7	d	3 47	8 13		21	23	29	6	16	17	g
8	e	3 47	8 13	Taurus	3	23	30	6	12	18	a
9	f	3 47	8 13		15	23	31	6	8	19	b
10	g	Margar. Q.			27	23	32	6	4	20	c
11	a	S. Barnabas		Gem.	10	23	32	6	00	21	d
12	b	3 47	8 13		22	23	32	5	56	22	e
13	☾	2 after Trin.		Cancer	5	23	31	5	52	23	f
14	d	3 47	8 13		18	23	30	5	48	24	g
15	e	3 47	8 13	Leo	2	23	28	5	43	25	a
16	f	3 48	8 12		15	23	27	5	39	26	b
17	g	3 48	8 12		29	23	25	5	35	27	c
18	a	3 48	8 12	Virgo	13	23	22	5	31	28	d
19	b	3 49	8 11		27	23	19	5	27	29	e
20	☾	3 after Trin.		Libra	11	[illegible]	15	5	22	30	f
21	d	3 49	8 11		25	23	12	5	18	July	
22	e	3 50	8 10	Scorpio	9	23	7	5	14	2	a
23	f	Term ends			24	23	3	5	10	3	b
24	g	S. John Bap.		Sagit.	8	22	58	5	6	4	c
25	a	3 52	8 8		22	22	52	5	2	5	d
26	b	3 52	8 8	Capr.	6	22	46	4	58	6	e
27	☾	4 after Trin.			20	22	40	4	54	7	f
28	d	3 54	8 6	Aqua.	3	22	33	4	50	8	g
29	e	S. Peter Ap.			16	22	26	4	46	9	a
30	f	3 56	8 4		29	22	19	4	41	10	b

Suns Decl. North, Increas. ✱ Suns Declination, North, Decreasing.

Complement of the Suns Right Ascension at Midnight.

July hath 31 dys. 1675.

	d.	h.	m.			
Last Qu.	4	11	21	N.	6 day Satu.	is with the Moon.
New Mo.	12	4	15	P. M.	21 day Jupi.	
Firſt Qu.	19	11	30	A. M.	16 day Mar.	
Ful Mo.	26	2	45	P. M.	10 day Ven.	
					14 day Merc.	

1		3 56	8 4	Piſces	11	22	1	4	37	11	c		
2	a	Vifira. Mary				23	22	3	4	33	12	d	
3	b	Martin		Aries		5	21	54	4	29	13	e	
4		5 after Trin.				17	21	45	4	25	14	f	
5	d	4 1	7 59			29	21	36	4	21	15	g	
6	e	4 2	7 58	Taurus	10	21	26	4		17	16	a	
7	f	4 3	7 57			23	21	16	4	13	17	b	
8	g	4 4	7 56	Gemini	5	21	6	4		9	18	c	
9	a	4 5	7 55			18	20	55	4		5	19	d
10	b	4 6	7 54	Cancer	0	20	44	4		1	20	e	
11		6 after Trin.				14	20	33	3	57	21	f	
12	d	4 8	7 52			27	20	21	3	53	22	g	
13	e			Leo	11	20	9	3		49	23	a	
14	f	4 11	7 49			15	19	56	3		45	24	b
15	g	Swythin		Virgo	9	19	43	3		41	25	c	
16	a	4 14	7 46			23	19	30	3		37	26	d
17	b	4 15	7 45	Libra	8	19	17	3		33	27	e	
18		7 after Trin.				22	19	3	3		29	28	f
19	d	4 18	7 42	Scorpio	6	18	49	3		25	29	g	
20	e	Margaret V.				20	18	34	3		21	30	a
21	f			Sagit.	4	18	20	3		17	31	b	
22	g	Magdalen				18	18	5	3		13		
23	a	4 25	7 35	Capric.	1	17	49	3		9	2	d	c
24	b	4 26	7 34			15	17	34	3		5	3	d
25						28	17	18	2		2	4	e
26	d	4 30	7 30	Aqua.	11	17	2	2		58	5	f	
27	e	4 31	7 29			24	16	45	2		54	6	g
28	f	4 33	7 27	Piſces	7	16	29	2		50	7	a	
29	g	4 35	7 25			19	16	11	2		46	8	b
30	a	4 36	7 24	Aries	1	15	54	2		42	9	c	
31	b	4 38	7 22			13	15	37	2		39	10	d

Suns Declination, North, Decreſing. Complement of the Suns Right Aſcention at Midnight.

	d.	h.	m.			
Last Qu.	3	3	15 P. M.	3 day Satu. / 18 day Jupi.	is with	
New Mo.	11	3	45 Mor.	12 day Mars	the	
First Qu.	17	3	39 P. M.	9 day Ven.	Moon.	
Full Mo.	25	4	25 Mor.	11 day Mer.		

						Sans Declination, North, Decreasing.			Complement of the Suns Right Ascension at Midnight.			
1	☾	Lammas day	Aries	25	15	16	2	35	21	☾
2	d	4 41	7 19	Taurus	7	15	1	2	31	12	g
3	e	4 43	7 17		19	14	43	2	27	13	a
4	f	4 44	7 16	Gemini	1	14	24	2	23	14	b
5	g	4 46	7 14		13	14	6	2	20	15	c
6	a	4 48	7 12		25	13	47	2	16	16	d
7	b	4 50	7 10	Cancer	8	13	27	2	12	17	e
8	☾	10 after Tr.			22	13	7	2	9	18	f
9	d	4 53	7 8	Leo	5	12	48	2	5	19	g
10	e	Lawrence			19	12	29	2	2	20	a
11	f	4 57	7 3	Virgo	3	12	9	1	58	21	b
12	g	4 59	7 1		18	11	49	1	54	22	c
13	a	Sun in Virg.		Libra	3	11	28	1	50	23	d
14	b	5 2	6 58		18	11	8	1	46	24	e
15	☾	11 after Tr.		Scorpio	3	10	47	1	43	25	f
16	d	5 7	6 54		17	10	26	1	39	26	g
17	e	5 8	6 52	Sagit.	1	10	5	1	35	27	a
18	f	5 10	6 50		14	9	44	1	32	28	b
19	g	5 12	6 48		28	9	23	1	28	29	c
20	a	5 14	6 46	Capr.	11	9	1	1	25	30	d
21	b	5 16	6 44		25	8	39	1	21	31	e
22	☾	12 after Tr.		Aqua.	7	8	17	1	17	☾	f
23	d	5 20	6 40		20	7	55	1	14	1	g
24	e	St. Barth. Ap.		Pisces	3	7	33	1	10	3	a
25	f	5 24	6 36		15	7	11	1	7	4	b
26	g	5 26	6 34		27	7	49	1	3	5	c
27	a	Dog days end		Aries	10	6	26	0	58	6	d
28	b	5 30	6 30		22	6	4	0	56	7	e
29	☾	13 after Tr.		Taurus	3	5	41	0	52	8	f
30	d	5 33	6 27		15	5	18	0	49	9	g
31	e	5 35	6 25		27	4	55	0	45	10	a

September hath 30 days. 1675.

	d.	h.	m.		
Last Qu.	2	7	57 Mor.	26 day Satur.	is with the Moon.
New Mo.	9	10	54 Mor.	14 day Jupi.	
First Qu.	16	00	45 Mor.	10 day Mar.	
Full Mo.	23	8	30 N.	8 day Ven.	
				day Mer.	

1	f	Giles	Gemini	9	4	33	00	41	11	b
2	g	London burn		22	4	10	00	37	12	c
3	a	Anno 1666	Cancer	3	3	47	00	34	13	d
4	b	5 43 6 17		16	3	23	00	30	14	e
5	C	14 after Trin		29	3	00	00	27	15	f
6	d	5 47 6 13	Leo	13	2	37	00	23	16	g
7	e	Nat. Elizab.		27	2	14	00	19	17	a
8	f	Nat. B. Virg.	Virgo	12	1	50	00	16	18	b
9	g	5 53 6 7		27	1	28	00	12	19	c
10	a	5 55 6 5	Libra	12	1	3	00	9	20	d
11	b	5 56 6 4		27	0	40	00	5	21	e
12	C	Sun in Libra	Scorp.	12	0	17	00	1	22	f
13	d	6 0 6 0		27	0	7	11	58	23	g
14	e	Exalt Cruci	Sagit.	11	0	30	11	54	24	a
15	f	6 5 5 55		25	0	54	11	51	25	b
16	g	Ember Week	Capr.	8	1	17	11	47	26	c
17	a	Lambert		22	1	41	11	43	27	d
18	b	6 10 5 50	Aquar.	4	2	4	11	40	28	e
19	C	16 after Trin		17	2	28	11	36	29	f
20	d	6 13 5 47		29	2	51	11	33	30	g
21	e	S. Matth. Ap.	Pisces	12	3	15	11	29	Octo.	
22	f	6 18 5 42		24	3	38	11	25	2	b
23	g	6 20 5 40	Aries	6	4	2	11	21	3	c
24	a	6 22 5 38		18	4	25	11	18	4	d
25	b	Cyprian	Taurus	00	4	48	11	15	5	e
26	C	17 after Trin		12	5	11	11	11	6	f
27	d	6 28 5 52		24	5	34	11	7	7	g
28	e	6 30 5 30	G.m.	6	5	58	11	3	8	a
29	f	S. Mich. Arc.		18	6	21	10	59	9	b
30	g	Hierom	Cancer	00	6	54	10	56	10	c

Suns Decl. North, decreas. ✱ Suns Declination, South, increasing.

Complement of the Suns Right Ascension at Mi night.

Last Qu.	1 d.	11 h.	39 m.	N.	23 day Sat.
New Mo.	8	7	46	N.	13 day Jup.
First Qu.	15	1	11	P. M.	10 day Mar.
Full Mo.	23	2	22	P. M.	8 day Ven.
Last Qu.	31	1	45	P. M.	9 day Mer.

						Suns Declination, South, increasing.		Complement of the Suns Right Ascension at Midnight.				is with the M
1	a	6 36	5 24	Cancer	12	7	6	10	52	11	d	
2	b	6 33	5 22		25	7	29	10	48	12	e	
3	c	18 after Trin		Leo	8	7	52	10	45	13	f	
4	d	6 42	5 18		22	8	14	10	41	14	g	a
5	e	6 44	5 16	Virgo	5	8	37	10	38	15	a	b
6	f	Faith			20	8	59	10	34	16	b	c
7	g	6 48	5 12	Libra	5	9	21	10	30	17	c	d
8	a	6 50	5 10		20	9	43	10	26	18	d	e
9	b	Dennis		Scorp.	5	10	5	10	22	19	e	f
10	c	19 after Trin			20	10	27	10	19	20	f	g
11	d	6 56	5 4	Sagit.	5	10	48	10	15	21	g	a
12	e	6 58	5 2		20	11	10	10	11	22	a	b
13	f	Sun in Scorp.		Capri.	4	11	31	10	7	23	b	c
14	g	7 2	4 58		18	11	52	10	3	24	c	d
15	a	7 3	4 57	Aqua.	1	12	13	10	0	25	d	e
16	b	7 5	4 55		14	12	34	9	56	26	e	f
17	c	20 after Trin			27	12	54	9	52	27	f	g
18	d	S. Luke Eva		Pisces	9	13	14	9	48	28	g	a
19	e	7 11	4 49		21	13	34	9	44	29	a	b
20	f	7 13	4 47	Aries	3	13	54	9	40	30	b	c
21	g	7 14	4 46		15	14	14	9	36	31	c	
22	a	7 16	4 44		27	14	33	9	32	Nov.		
23	b	Term begins		Taurus	9	14	53	9	28	1	e	
24	c	21 after Trin			21	15	12	9	24	3	f	
25	d	Crispinus		Gemini	3	15	30	9	21	4	g	a
26	e	7 23	4 37		15	15	49	9	17	5	a	b
27	f	7 25	4 35		27	16	7	9	13	6	b	c
28	g	S. Si. & Jude		Cancer	9	16	24	9	9	7	c	d
29	a	7 29	4 31		21	16	43	9	5	8	d	e
30	b	7 30	4 30	Leo	4	17	6	9	1	9	e	
31	c	22 after Trin			17	17	17	8	57	10	f	

	d.	h.	m.			
New Mo.	7	5	24	Mor.	19 day Satu.	is with the Moon.
First Qu.	14	5	6	Mor.	9 day Jup.	
Full Mo.	22	9	8	Mor.	6 day Mars	
Last Qu.	30	1	30	Mor.	7 day Ven.	
					8 day Mer.	

1	d	All Saints			Virgo	1	17	34	8	53	11	g
2	e	All Souls				15	17	50	8	49	12	a
3	f	7 37	4	23		29	18	6	8	45	13	b
4	g	7 39	4	21	Libra	14	18	22	8	41	14	c
5	a	Powd. Treas.				29	18	38	8	37	15	d
6	b	Leonard			Scorp.	14	18	53	8	33	16	e
7	c	23 after Trin				29	19	8	8	29	17	f
8	d	7 45	4	15	Sagit.	14	19	22	8	24	18	g
9	e	7 47	4	13		29	19	39	8	20	19	a
10	f	7 48	4	12	Capr.	13	19	50	8	15	20	b
11	g	Martin P. M.				27	20	4	8	11	21	c
12	a	Sun in Sagit.			Aqua.	10	20	16	8	7	22	d
13	b	7 52	4	8		23	20	29	8	2	23	e
14	c	24 after Tri.			Pisces	6	20	42	7	58	24	f
15	d	7 55	4	5		18	20	53	7	53	25	g
16	e	7 56	4	4	Aries	1	21	5	7	49	26	a
17	f	Q. Elizabeth				12	21	16	7	45	27	b
18	g	7 58	4	2		24	21	27	7	41	28	c
19	a	7 53	4	7	Taurus	6	21	37	7	37	29	d
20	b	Edmond				18	21	47	7	32	30	e
21	c	25 after Trin				29	21	57	7	28		
22	d	Cicily			Gemin.	12	22	6	7	24	2	g
23	e	Clement				24	22	14	7	20	3	a
24	f	8 4	3	6	Cancer	6	22	22	7	15	4	b
25	g	Katherine				19	22	30	7	11	5	c
26	a	8 6	3	54	Leo	1	22	37	7	7	6	d
27	b	Weddings out				14	22	44	7	3	7	e
28	c	Advent Sun.				27	22	51	6	58	8	f
29	d	Term ends			Virgo	11	22	57	6	54	9	g
30	e	S. Andrew A.				25	23	2	6	49	10	a

Sans Declination, South, increasing. Complement of the Suns Right Ascension at Midnight.

December hath 31 days. 1675.

	d.	h.	m.			
New Mo.	6	4	10	P. M.	16 day Satu.	is with the Moon.
First Qu.	13	00	15	Mor.	8 day Jup.	
Full Mo.	22	3	00	Mor.	5 day Mars	
Last Qu.	29	10	45	A. M.	7 day Ven.	
					6 day Mer.	

1	f	8 10	3 50	Libra	8	23	7	6	45	11	b
2	g	8 11	3 49		23	23	12	6	39	12	c
3	a	Lucius.		Scorp.	7	23	16	6	35	13	d
4	b	8 12	3 48		22	23	20	6	31	14	e
5	C	2.Sun.in Ad.		Sagit.	7	23	23	6	26	15	f
6	d	8 22	3 48		22	23	26	6	22	16	g
7	e	8 12	3 48	Capr.	7	23	28	6	18	17	a
8	f	Conc. Mary			21	23	29	6	13	18	b
9	g	8 13	3 47	Aqua	5	23	31	6	9	19	c
10	a	8 13	3 47		18	23	32	6	4	20	d
11	b	Sun in Capr.		Pisces	1	23	32	6	00	21	e
12	C	3.Sun in Ad.			14	23	32	5	55	22	f
13	d	Lucid			26	23	31	5	51	23	g
14	e	8 13	3 47	Aries	9	23	30	5	46	24	a
15	f	8 13	3 47		21	23	29	5	41	25	b
16	g	Ember week		Taurus	2	23	27	5	36	26	c
17	a	8 12	3 48		14	23	24	5	32	27	d
18	b	9 12	3 48		26	23	21	5	27	28	e
19	C	4.Sun.in Ad.		Gemini	8	23	17	5	23	29	f
20	d	8 11	3 49		20	23	14	5	19	31	g
21	e	S. Thom. Ap.		Cancer	2	23	9	5	15	36	a
22	f	8 10	3 50		15	23	4	5	11	1676	
23	g	8 9	3 51		28	22	59	5	6	2	b
24	a	8 8	3 52	Leo	11	22	53	5	2	3	c
25	b	Christmas d			24	22	47	4	57	4	d
26	C	S. Stephen		Virgo	8	22	40	4	53	5	e
27	d	S. John Ev.			22	22	33	4	49	6	f
28	e	Innocents.		Libra	5	22	25	4	44	7	g
29	f	8 4	3 56		19	22	17	4	40	8	a
30	g	8 3	3 57	Scorpio	3	22	9	4	35	9	b
31	a	8 2	3 58		18	22	0	4	30	10	c

* Suns Declin. South, increas.

Suns Declination, South, decreasing.

Complement of the Suns Right Ascension at Midnight.

The Use of the Foregoing

KALENDER,

Together vvith some other *TABLES* vvhich follovv, in the performance of many neceſſary Concluſions, Uſeful in the Art of

NAVIGATION.

I. *The Uſe of the* First *and* Second *Columns.*

THeſe two Columns need no Explanation, for the *Firſt* ſheweth the *Day of the Moneth*, the *ſecond* againſt it ſhews the *Day of the week*, ſo the 12 day of *January* will be *Tueſday*, and the 23 day *Saturday*, upon which day the *Term begins.*

II. *The uſe of the* Third Column.

In this *Column* you have the *Feaſts* and *Terms* both *Fixed* and *Moveable*, and amongſt them, upon thoſe days where no *Feaſt* or *Term* happens to ſtand, you have the time of the *Suns Riſing* and *Setting*---So upon the ninth of *January* you ſhall find that the *Sun Riſes* at 7 hours and 50 min. in the morning, and *ſets* at 4 hours and 10 min. in the Evening, which 4 hours 10 min. being doubled giveth 8 hours 20 min. for the *length of the day*, and 7 hours 50 min. the time of *Sun riſing*, being doubled giveth 15 hours 40 min. for the *length of the Night.*

III. *The Use of the* Fourth Column.

The *Fourth Column* shews in what *sign* and degree of the *Ecliptick* the Moon is every day at noon.

IV. *The use of the* Fifth Column.

The *Fifth Column* shews what *Declination* the Sun hath every day at Noon, and whither it have *North* or *South Declination*, and whither it do *increase* or *decrease*.

By this *Table* and the *Meridian Altitude* of the Sun you may find the *Latitude* of any part of the habitable world.

V. *The use of the* Sixth Column.

The *sixth Column* shews the *Complement of the Suns right Ascension* every day at *Midnight*, by which and a *Table of fixed Stars*, their *Declination*, *Right Ascension*, and *Semidiurnal Arch*, the time of *Riseing*, *Southing* and *Setting* of any of them (as also of any planet whose place in the Ecliptick is known) may be found.

VI. *The two* last *Columns* shew the *day of the Month*, and the *day of the Week*, according to the *Gregorian* or *Forraign account*, which differs 10 days from the *Iulian* or *English account*.

Having thus given you a general view of the KALENDER, and the several parts thereof, I will now proceed to shew you some good and profitable Uses that may be made thereof. And

I. *How to find the* Latitude *of any place in any part of the World by the Suns Declination, and his* Meridian Altitude, *any day in the year.*

This is a right useful and necessary *Proposition*, and is of dayly Use at Sea, and may also be made use of by Land: And in it there are several *Varieties* or *differences* of working, in respect of the *Suns* haveing either *North* or *South declination* from the *Equinoctial*, or in respect of its being either upon the *North* or *South* side of the *Meridian*. All which *Varieties* are here following, both briefly and plainly Exemplified.

When

When the *Sun* is in the *Equinoctial*, and hath no *declination*, and the *Meridian Altitude* observed to be on

South side of the *Meridian*. — The *Meridian Altitude*, taken from 90 *deg.* leaves the Elevation of the *North Pole*, or the Latitude *North*.

North side of the *Meridian*. — The *Meridian Altitude* taken from 90 *deg.* leaves the Elevation of the *south pole*, or Latitude *south*.

When the Suns *declination* is

North. — If the *meridian altitude* be less then 90 *deg* and the Sun upon the *south* side of the *meridian*, the *suns declination* taken from the *meridian altitude*, leaves the height of the *Equinoctial*; which taken from 90 *deg.* leaves the *Latitude North*.

South. — If the *meridian altitude* be less then 90 *deg.* and the *sun* upon the *south* side of the *meridian*, add the *declination* and *meridian altitude* together, the *sum* of them is the height of the *Equinoctial*, which taken from 90 *d.* leaves the *Latitude North*.—— But if the Sum of the *declination* and *altitude* exceed 90 *deg.* take 90 *degrees* therefrom, and the Remainer will be the *Latitude south*.

VVhen the Suns *declination* is

North. — If the *meridian altitude* be leſs then 90 *deg.* and the Sun upon the *North* ſide of the *meridian*, *add* the *meridian altitude* and *declination* together, their Sun is the height of the *Equinoctial*, which being taken from 90 *deg.* leaves the elevation of the *ſouth pole.*—— But if the ſum exceed 90 *deg.* take 90 therefrom, and the remainer will be the *Latitude North.*

South. — If the *Meridian altitude* be leſs then 90 *deg.* and the Sun upon the *North* ſide of the Meridian, *Subſtract* the *Declination* from the *Meridian altitude*, the remainer is the height of the *Equinoctial*, which taken from 90 *deg.* leaves the *Latitude ſouth.*

VVhen the Suns *declination* is *North* or *South* — If the *Meridian Altitude* be juſt 90 *deg.* The Suns *declination* is the *Latitude* — *North* or *South*

If the *meridian altitude* be obſerved under the Pole, (or within the limits of the *artick* or *antartick circles*) then muſt the *Suns declination* be taken from 90 deg. and that which remains is the *Suns diſtance from the Pole*, which being *added* to the *Meridian altitude*, their Sun is the Latitude of the place, either *North* or *South*, according as the *Meridian altitude* was obſerved to be.

These are all the *varieties* that can possibly happen in any part of the *world*, and at any time of the *Year*, and ought to be well grounded in the memory.——And what is here said concerning finding of the *Latitude* by the *Suns declination*, and his *Meridian altitude*, the same is to be effected by any *fixed star*, whose *declination* is known, and whose *altitude* is observed, being upon the *meridian*.

I might here shew you other ways to find the *latitude* both by the *Sun* and *stars*, as also by the *North star*, &c. But those I refer to another year. And now I will give you a *table* of some eminent *fixed stars*, shewing you upon what day in the Year they will be upon the *meridian* at 12 at night, and also what *declination* they have, whereby, you may (by them) find the *latitude* you are in, in all respects as you did before by the Suns *meridian altitude* and *declination*.

Names of the STARS.	*Declination* d.	m.		*Time of being upon the merid. at 12 at n.*	
South Arm of the Crab,	13	8	N	*January*	17
Hydras Head,	7	12	S		23
Lyons Heart,	13	36	N	*February*	3
Lyons Neck,	29	5	N		5
Great Bears side,	58	12	N		16
Great Bears back,	63	55	N		17
Lyons back,	22	22	N		21
Lyons tail,	16	28	N	*March*	2
Great Bears thigh,	15	36	N		3
First in the Great Bears Tail,	57	50	N		20
Virgins Spike,	9	21	S		28
Second in the Great Bears Tail,	56	44	N		29
Third in the Great Bears Tail,	51	33	N	*April*	5
Pegasus shoulder,	35	16	S		8
Archirus,	21	1	N		12
South ballance,	14	34	S		20
Foremost guard,	57	38	N		27
North ballance,	8	5	S		28

Names of the STARS.	*Declination* D.	M.		*time of being upon the mer. at 12 at nig.*	
North Crown,	27	53	N		
Hinder Guard,	73	16	N	*May*	3
Neck of the Serpent,	7	33	N		4
Scorpions heart,	25	36	S		6
Serpentarius Knee,	15	13	S		16
Head of Hercules,	14	50	N		25
Head of Sagit. Dart,	30	00	S		27
Dragons Head,	51	36	N	*June*	7
Lyra, the Harp,	38	30	N		8
Swans Bill,	27	17	N		17
Vultures Heart,	8	2	N		30
Swans Tail,	44	6	N	*July*	4
Pegasus Mouth,	8	18	N		17
Pegasus Wing,	13	24	N	*August*	2
Head of Andromeda,	27	14	N		23
North in the Whales Tail,	10	41	S	*Septemb.*	10
South in the Whales Tail,	19	51	S		13
Cassiopeas Knee,	58	27	N		20
South-horn of the Ram,	17	38	N		30
Rams Head,	21	51	N	*October*	9
Medusa's Head,	35	33	N		12
Perseus Foot,	30	52	N		27
Bulls Eye,	15	47	N	*November*	7
The Goat,	45	36	N		18
Orions Foot,	8	37	S		25
First in Orions Girdle,	00	3<	S		27
Orions right shoulder,	7	18	N	*December*	6
Pollox Foot,	16	39	N		14
Great Dog,	16	13	S		18
Little Dog,	6	5	N		3

By this *Table* you may see what *Stars* are fit for *Observation*, at any time of the *Night*. For the *Stars before*, come to the *meridian* so much *before*, and the *Stars after*, so much *after midnight*, as they are distant in *days*, allowing one hour for 15 days, or four Minutes for one day.

A Table shewing the *Right Ascension* and *semidiurnal Arch* of divers Eminent *Fixed stars*, throughout the *Zodiack*, by which may be readily found at what time any of them do *Rise*, *set*, come to the *meridian*, &c. And also the *Hour of the Night*.

Names of the STARS.	*Right Ascension.* H.	M.	*Semidiurn. Arch.* H.	M.
The southermost in the whales tail,	0	27	4	4
The Girdle of Andromeda,	0	51	10	6
The foremost Horn of the Ram,	1	36	7	39
The Belly of the Whale,	1	36	4	56
The southermost foot of Androme.	1	43	*sets not.*	
Jaw of the Whale,	2	45	5	45
The brightest of the seven stars,	3	28	8	16
Aldebaron, the Bulls eye,	4	17	7	27
Capella, the Goat,	4	50	*sets not.*	
Orions foremost shoulder,	5	8	6	32
Orions head,	5	17	8	1
Middlemost in Orions Belt,	5	20	5	52
Great Dog, *Cyrius*,	6	31	4	30
Little Dog, *Pricion*,	7	22	6	30
The lowermost head of the Twins,	7	26	9	4
North Asellus,	8	23	8	14
South Asellus,	8	25	7 14	50
Lions heart,	9	30	7	14
Lions tail,	11	32	7	32
Vindemiatrix,	0	46		
Spica Virginis	1	8	5	11
Arcturus	2	1	2	2
Bootes left shoulder	2	19	*sets nat.*	
South Ballance	2	23	4	40
North Ballance,	3	00	5	17

Names of the STARS.	Right Ascension. H.	m.	semidiurn. arche H.	m.
Bright ſtar of the Crown,	3	25	8	57
Scorpions heart, Antares,	4	9	3	23
Hercules right ſhoulder,	4	16	8	10
Hercules Head,	5	00	7	22
Ophiucus Head,	5	20	7	10
The Harp, Lyra	6	22	ſets not	
The Tail of the Vulture,	6	51	7	14
The ſwans bill,	7	18	8	51
The Vulture,	7	35	6	43
The lowermoſt horn of the Goat;	8	3	4	33
Swans breaſt,	8	11	ſets not	
Swans tail,	8	31	ſets not	
Lowermoſt wing of the ſwan,	8	33	9	48
Cepheus girdle,	9	25	ſets not	
Pegaſus Mouth,	9	28	6	44
Right ſhoulder of the waterbearer,	9	47	5	50
Fomahant	10	39	2	28
Scheat	10	48	8	42
Mercha	10	49	7	13
Head of Androme.	11	52	8	51
Caſſiopea's Chair.	11	53	ſets not	

The

The use of the Foregoing Table *of the stars* right ascension *and* Semidiurnal Arch.

The Uses of this Table are many, but being joyned with the Table of the *complement of the suns right ascension at midnight*, may be resolved these *Problems* following.

1. *To know when any of the stars mentioned in the former table,* (or any other star, whose right ascension is known) *comes to the meridian.*

If you add the *right ascention* of the *star*, to the *complement of the suns right ascension* for the day proposed, the sun shall be the *hour* that that *star* comes to the *meridian* that *night*, if the number of hours be under 12. But if the number of hours exceed 12, then 12 hours being taken therefrom, the remainer will be the *hour* that that star will come to the *meridian* the next morning.

Example 1. Let it be required to find, at what time the *Bulls eye* will be upon the *meridian* on the first of *January* this year 1675. *ho. m.*

The complement of the suns right ascension, *Jan.* 1. is—4. 25.
The Right Ascension of the *Bulls eye* is———4. 17.
The *Bulls eye* will be upon the Meridian at night———8. 42.

Example 2. Let it be required to find, at what hour the *Great Day* will be upon the *meridian*, upon the 18 of October this year 1675. *ho. m.*

The Comp. of the Suns right ascension, Oct. 18. is—9. 48
The right ascension of the great day, is———6. 31.
The Sum———16. 19.
Substract. 12 *h.*—12. 00.
The *Great Day* will be upon the Meridian, at the next morning on the 19th day.———4. 19.

II. To

II. *To know when any of the ſtars mentioned in the table do riſe or ſet any day in the year.*

All thoſe ſtars which have North declination, if their declination be greater then the complement of the Latitude, they never riſe nor ſet, but are always above the Horizon.—— But if their declination be leſſer then the complement of the Latitude, then they do riſe and ſet: and to find the time of any ſtars riſing or ſetting you muſt.

By the foregoing Problem, find at what hour that ſtar comes to the Meridian, then look in the table for the *Semidiurnal Arch* of that ſtar, which being added to the time of the ſtars coming to the South, will give you the time of the *ſtars ſetting* and being taken from the time of the ſtars being upon the *meridian*, it will leave the time of the *ſtars riſing*.

Example. 1. I would know upon the firſt of January 1675, at what hour the *Bulls eye* doth *riſe* and *ſet* that day.

By the foregoing problem you did find that the *Bulls eye* did come to the Meridian, at 8 hours and 42 minutes at night, and by the former table you find that the *Semidiurnal Arch* of the *Bulls eye* is 7 *ho.* 27 *min.* which added to 8 *ho.* 42 *min.* makes 16 *ho.* 9 *min.* from which take 12 *ho.* and there remains 4 *ho.* 9 *min.* wherefore the *Bulls eye* ſetteth at 9 *min.* after 4 the next morning —— In like manner for the Riſing of the *Bulls eye*, the ſame day, 7 *ho.* 27 *min.* (the Semidiurnal Arch of the *Bulls eye*) being taken from 8 *ho.* 42 *min.* (the time of the *Bulls eye* being South) there will remain 1 *ho.* 15 *min.*

min. which shews that the *Bulls eye* did rise at 15 *min.* after 1 in the Afternoon on the first of January, 1675.

	h.	*m.*
January 1. The Bulls eye was South at	8	42 at Night.
Semidiurnal Arch of Bulls eye.	7.	27.
	16.	09.
Substract 12 there rests the setting,	4.	9. next Morn.
The Semidiurnal Arch substracted,	1.	15. Afternoon,
there rests the rising.		

Example 2. Let it be required to know at what time the *Great Dog* doth *rise* and *set* upon the 18 of October.

The *Great Dog* did come to the Meridian on the 19 of October, at 4 *ho.* 19 *m.* in the morning, the Semidiurnal Arch of the *Great Dog* is 4 *ho.* 30 *m.* which added to 4 *ho.* 19 *m.* the Sun is 8 *ho.* 49 *m.* the time of the *Great Dogs setting* in the forenoon, the 19 day, and the semidiurnal Arch 4 *ho.* 30 *min.* being substracted from 4 *ho.* 19 *m.* (the southing) 12 *ho.* being added that substraction may be made) there remains 11 *ho.* 30 *m.* the time of the *Great Dogs rising* on the 18 of October at night.

III. *To know how long any star doth continue above the Horizon, from his rising to his setting.*

The *semidiurnal Arch* of any star as you find in the Table, being doubled gives the time that that star continues above the Horizon.

So the *semidiurnal arch* of the brightest of the *seven stars*, is 8 *ho.* 16 *min.* which being doubled makes 16 *ho.* 32 *m.* And so long do the *Pleiades* or *seven stars* continue above the Horizon.

IV. To

IV. *To find the Hour of the Night by any of theſe ſtars. And* Firſt, *By ſeeing any of them upon the Meridian.*

Example, If upon the *6th.* of *December*, you do ſee *Bulls eye* upon the Meridian, and would know from thence what hour of the night it is.

This is little other then finding at what hour, any ſtar will be upon the Meridian.

Wherefore, to *6 ho. 22 m.* the Complement of the Suns right aſcenſion, December *6.* add the right aſcenſion of the Bulls eye *4 ho. 17 m.* and the ſum of them will be *10 ho. 39 m.* ſo that ſeeing the *Bulls eye* upon the Meridian on the *6th.* of December, you may conclude the hour of the Night to be *39 m.* after *19*.

Secondly, By *ſeeing any of theſe ſtars either riſing or ſetting.* *Example*, If upon the *15* of October I ſhould ſee *Cor ſcorpio* a riſing in the Eaſt, and from thence would know the time of the night.

Firſt, ſeek at what time *Cor ſcorpio* will be upon the Meridian that day, and you ſhall find that he will be upon the Meridian at *9 mia.* after *2* in the morning, from which ſubſtract *3 ho. 23 m.* (the ſemidiurnal arch) and there will remain (*12 ho.* being added) *10 ho. 46 m.* at night, ſo that ſeeing *Cor ſcorpio* riſing upon the *15th* of October, you may conclude the hour to be *46 m.* after *10* at night.

Again, If upon the ſame day, (or early in the next morning) you ſhould ſee *Cor ſcorpio* a ſetting, and would know the hour, you muſt then add *3 ho. 23 m.* the ſemidiurnal arch, to *2 ho. 9 m.* the time of the ſtars being upon the Meridian, and the ſun will be *5 ho. 32 m.* ſo that if you ſee *Cor ſcorpio* ſetting, upon

upon the 15 of October, you may conclude the hour to be 32 *m.* after 5 in the morning.

V. *To know what day in the year any ſtar mentioned in the foregoing table, (or any other whoſe right aſcenſion is known) ſhall come to the Meridian at 12 a Clock at night.*

Subſtract the *right aſcenſion* of the *ſtar* from 12 hours, and note the remainer, then go to the *Kalender*, and look for that number in the Column of the *Complement of the ſuns right aſcenſion*, and the day of the month that that number ſtandeth againſt, is the day that that ſtar will be upon the *Meridian* at 12 a Clock at Night.

Example, Let it be required to find out what day of the Year *Pegaſus* Mouth will be upon the Meridian at 12 a Clock at night. The *Right aſcenſion* of *Pegaſus* Mouth, is 9 hours 28 min. which being taken from 12 hours, there remains 2 hours 32 min. If you look in the *Kalender* (in the Column of the *Complement of the Suns right aſcention*) for this number 2 hours 32 min. you ſhall find 2 hours 31 min. (which is the neereſt number to it) to ſtand againſt the Second day of *Auguſt*, upon which day *Pegaſus* Mouth will be upon the Meridian at 12 a Clock at Night.

I might here inſert the making of a Nocturnal, by which, not only the *Riſing*, *Southing*, and *ſetting* of the *ſtars* may be moſt eaſily and readily found, but alſo diſcover the place of the Moon, with the time of her *riſing*, *ſouthing* and *ſetting*, and alſo of the planets, which inſtrument alſo ſhall ſhew the *tides*, the *moons comming* to *ſouth*, and divers other things depending on the ſame, but theſe I ſhall reſerve to ſome other year, and in the mean time I ſhall adviſe you to two Hemiſpheres, with a book of the uſe of them, which Hemiſphere contain all the ſtars and conſtellations from the Equinoctial to both the poles, and the book ſhews the uſes of them, which are many The Book was publiſhed by Mr. Francis Lamb, and both the book and Hemiſphere are ſold by Mr. Robert Morden at the ſign of *Atlas* in Corn-hill, neer the Royal Exchange, where you may have all ſorts of Globes, Maps, ſea-plats, &c.

A

A Table, *whereby you may proportion the suns declination to any time of the day, or to the meridian of any other part of the World.*

Hours from Noon, or the difference of Meridians, East or West from London.

Minutes of the difference of the Suns Declination.

	2		4		6		8		10		12	
	m.	s.	m.	s.	m.	s.	m.	s.	m.	s.	m.	s.
1	0	5	0	10	0	15	0	20	0	25		30
2	0	10	0	20	0	30	0	40	0	50	1	00
3	0	15	0	30	0	45	1	00	1	15	1	30
4	0	20	0	40	1	00	1	20	1	40	2	00
5	0	25	0	50	1	15	1	40	2	5	2	30
6	0	30	1	00	1	30	2	00	2	30	3	00
7	0	35	1	10	1	45	2	20	2	55	3	30
8	0	40	1	20	2	00	2	40	3	20	4	00
9	0	45	1	30	2	15	3	00	3	45	4	30
10	0	50	1	40	2	30	3	20	4	10	5	00
11	0	55	1	50	2	45	3	40	4	35	5	30
12	1	00	2	00	3	00	4	00	5	50	6	00

Minutes of the difference of the suns declination.

	14		16		18		20		22		24	
	m.	s.	m.	s.	m.	s.	m.	s.	m.	s.	m.	s.
1		35	0	40	0	45	0	50	0	55	1	0
2	1	10	1	20	1	30	1	40	1	50	2	0
3	1	45	2	00	2	15	2	30	2	45	3	0
4	2	20	2	40	3	00	3	20	3	40	4	0
5	2	55	3	20	3	45	4	10	4	35	5	0
6	3	30	4	00	4	30	5	00	5	30	6	0
7	4	5	4	40	5	15	5	50	6	25	7	0
8	4	40	5	20	6	00	6	40	7	20	8	0
9	5	10	6	00	6	45	7	30	8	15	9	0
10	5	50	6	40	7	30	8	20	9	10	10	0
11	6	25	7	20	8	50	9	10	10	5	11	0
12	7	00	8	00	9	00	10	00	11	0	12	0

The uſe of the foregoing Table.

A Table of the Suns declination, that is made for one particular place (as this in the Kalender is made for the Meridian of London) doth not ſerve generally for all places, but only for ſuch as lye in the ſame, neer the ſame Longitude, for the Sun doth not come to the Meridian at all places at the ſame time. But if a place be 15 deg. different in Longitude Eaſtward from London, the *ſun* comes to that place one hour ſooner then it comes to the Meridian at London; and if 30 deg. different in Longitude Eaſtward, it comes to the Meridian two hours ſooner, &c. In like manner, if the place differ in Longitude 50, or 30 degrees Weſtward from London, then the *ſun* comes to that Meridian one or two hours later then it doth at London: and ſo conſequently ſooner or later then it comes to the Meridian of London.

Now to find what declination the *ſun* ſhall have in the Meridian of any other place any day in the Year, this Table will help you.

As for Example, Let it be required to find what declination the *ſun* ſhall have upon the 10 of April, in the Bay of *Sebaſtian*, which place differs in Longitude from London 58 degrees Eaſtward (which is neer four hours of time ſooner.) The Declination for the 10 of April, in the Kallender is 11 degrees 40 minutes North, increaſing, and the day before it is 11 degrees 20 min. The difference between theſe two days is 20 m. Wherefore ſeek twenty minutes (the difference of declination in the head of the Table, and 4 hours (the difference of Longitude) in the ſide of the Table, and in the Common Angle a place of meeting you ſhall find 3 min. 20 ſeconds, which being deducted from the 11 deg. 40 minutes, the declination of the *ſun* at London, leaves 11 degrees 36 minutes, 40 ſeconds, for the *ſuns* declination in the Bay of Sebaſtian.

A Catalogue of the Longitude and Latitude of all the principal Harbors, Headlands, and Islands upon the Coasts of England, Scotland, *and* Ireland, *their Longitude being accounted from the Meridian of* London, *either Eastward or Westward.*

The sea Coasts of *England*, from Barwick to the Lizard.

Names of the places.	Latitude. North Latitude. D.	M.	Longitude. West Longitude. D.	M.
New-Castle,	54	58	2	10
Shelles,	55	2	2	0
Sinderlands	54	42	1	58
Hartle-Pool,	54	37	1	55
Whitley,	54	35	1	14
Scarborough,	54	20	1	3
Flamborough-head,	54	8	0	51
Burlington,	54	0	0	56
The spurn,	53	45	0	22
Hull,	53	45	0	8
Grimsbey,	53	39	0	56
Baston,	53	9	0	22
Lyn,	52	58	0	09
Wells,	53	7	0	33
Lockre,	53	4	0	55
Cromar,	53	20	1	17
Winterton,	52	52	1	22
Yarmouth,	52	45	1	18
Alborow	52	24	1	15
Orfordnafs,	52	20	1	11
Ipſwich,	52	14	1	0
Harwich,	51	11	1	3
Colcheſter,	52	4	0	38
Tilbury-Hope,	51	38	0	30
Graveſend,	51	35	0	20
London,	51	32	0	0

Names of places.	Latitude. North Latitude. D.	M.	Longitude D.	M.
Rocheſter,	51	28	0	30
Queenborough,	51	30	0	37
Margarat,	51	29	1	10
The North Foreland,	51	28	1	20
Sandwich,	51	27	1	9
The Downs,	51	25	1	21
The South Foreland,	51	22	1	20
Ripraps,	51	13	1	25
Dover,	51	25	1	8
Dongeneſs,	51	9	0	51
Rye,	51	13	0	45
Beache,	50	58	0	9
Shoram,	51	7	0	27
Portſmouth,	51	8	1	0
Iſle of Wyght,	50	58	1	16
Pool,	51	4	1	50
Waymouth,	51	3	2	40
Portland,	50	50	2	48
Chiddock,	50	57	3	10
Lime,	50	55	3	14
Abſon.e,	50	47	3	47
The Berry,	50	40	3	49
Tarbay,	50	42	3	48
Dartmouth,	50	37	3	56
The tarr,	50	27	4	5
The Ediſtone,	50	22	4	40
Plymouth,	50	36	4	33
Ram head,	50	34	4	35
Foy,	50	35	4	50
Falmouth,	50	22	5	12
Lizard,	50	10	5	24

East Longitude. — weſt Longitude.

The

The Sea-Coasts of Scotland	Latitude. D. M.		Longitude. D. M.	
Skey Island,	57 40	North Latitude.	7 21	West Longitude.
Lewis Island,	58 30		8 12	
Fair Head,	58 43		7 5	
Shot Land,	60 12		2 30	
Iair Island,	59 30		2 5	
Ortne Islands,	58 50		3 22	
Cat Nasse,	58 37		3 46	
Basom Nasse,	57 48		2 48	
Abordene,	57 22		2 55	
Dondy,	56 16		3 7	
Leth,	56 3		3 15	
Barwick,	55 49		2 45	
The Sea-Coasts of Ireland.				
Fair Foreland,	55 35	North Latitude.	8 0	West Longitude.
Fore	55 48		10 20	
Air Islands,	55 18		11 0	
Stages,	54 27		11 45	
Aion Islands,	53 21		12 0	
Galloway,	53 40		10 40	
Galley Head,	53 20		11 0	
Loopas Head,	52 44		11 5	
Limbrick,	53 4		10 15	
Blaskas,	52 15		11 35	
Skillickes,	52 0		11 30	
Kow and Calf,	51 42		11 6	
Mizand,	51 28		10 45	
Old Head,	51 40		8 38	
Sing Sale,	51 52		8 32	
Cork,	52 1		8 20	
Waterford,	52 30		7 48	
Waxford,	52 33		7 8	
Dublin,	53 32		7 20	
Lamby,	53 44		7 10	

Advice Concerning Letters which may be sent from LONDON.

On Munday, to

France,	*Sweedland*,
Spain,	*Denmark*,
Italy,	*Kent*,
Germany,	the *Downs*.
Flanders,	

On Tuesday, to

Holland,	*Ireland*,
Germany,	*Scotland*,
Sweedland,	*England*,
Denmark,	*Wales*.

On Wednesday, to

All parts of *Kent* and the *Downs*.

On Thursday, to

France,	All parts of
Spain,	*England* and
Italy,	*Scotland*.

On Friday, to

Flanders,	*Denmark*,
Germany,	*Holland*,
Italy,	*Kent*,
Sweedland,	The *Downs*.

On Saturday, to

All parts of *England*, *Wales*, *Scotland*, and *Ireland*.

Letters are returned from all parts of *England*, and *Scotland* certainly, every *Munday*, *Wednesday*, and *Friday*.

From *Wales*, every *Munday* and *Friday*.

From *Kent* and the *Downs* every day.

From other parts more ur certainly, in regard of the Sea.

A Catalogue of some Principal Marts and Fairs kept in Divers Parts of the World: their Begining, Continuance, and Ending.

Fairs or Marts in Italy.

NOcera, *begins the first Sund. in* Lent, *continues* 15 *days.*
Fuligno, *begins Ap.* 25, *continues till the last of* May.
Venice, *begins on* Ascension Even, *continues* 15 *days, a most Glorious Fair for all sorts of Vessels of silver and gold.*
Ravena, *begins* May 1, *continues* 13 *days.*
Taranto, *begins* May 1, *continues* 3 *days.*
Toscanella, *begins* May 1, *continues* 8 *days.*
Orvietto, *begins* Novemb. 12, *continues* 8 *days.*
Orvietto, *begins on* Corpus Christi *day, continues* 8 *days.*
Salerno, *begins* May 10. *continues* 15 *days.*
Lanciano, *begins the last* Tuesday *of* May, *continues* 15 *days*
Rimini, *begins* June 20, *continues till* July 25.
Cosenza, *begins* July 1, *continues* 8 *days.*
Colenza, *begins* July 25, *continues* 8 *days.*
Squillasa, *begins* July 8, *continues* 8 *days.*
Montilione, *begins* July 21, *continues* 8 *days.*
Ceccna, *begins* August 1, *continues all that month,* v. 31 *days.*
Hostea, *in the province of* Mantua, *beg.* Aug. 10, *contin.* 3. *days.*
Mandonadella-gratia, *in the Suburbs of* Mantoa, *begins* Aug. 15. *continues* 8 *days.*
Ferrara, *begins* Aug. 15, *continues* 16 *days.*
Lanciano, *begins the last* Thursday *in* Aug. *continues* 15 *days.*
Faenza, *begins* Septemb. 1, *continues that whole month.*
Modena, *begins* Septemb. 14, *continues* 8 *days.*
Recanati, *begins* Septemb. 15, *continues till* November 15.
Salmoo, *begins* September 21, *continues* 15 *days.*
Crema, *begins* September 25, *continues* 16 *days.*
Trani, *begins* October 4, *continues* 8 *days.*

Rovige,

Rovigo *and* Pizighiton, *begins* Oct. 29, *continues* 10 *days.*
Vicenza, *begins* Oct. 16, *continues* 15 *days.*
Trevizo, *begins* October 22, *continues* 15 *days.*
Nocera, *begins* November 1, *continues* 15 *days.*
Barletta, *begins* November 11, *continues* 8 *days.*
Pesara, *begins* November 15, *continues till* Christmas.
Udine, *begins* November 26, *continues* 5 *days.*
Bari, *begins* December 26, *continues* 10 *days.*
Taranto, *begins* January 17, *continues* 8 *days.*

Four Fairs at *Lyons* in *France:*

The 1 *begins the first* Munday *after* Epiphany, *con.* 15 *Days.*
The 2 *begins the first* Munday *after* Easter, *continues* 15 *days.*
The 3 *begins the first* Munday *in* August, *continues* 15 *days.*
The 4 *begins the first* Munday *in* September, *contin.* 15 *days.*

Three Fairs or Marts in *Antwerp.*
The 1 *begins the* 1 Mund. *after* Easter, *contin. a whole month.*
The 2 *begins at* Pentecost, *and continues a whole month.*
The 3 *begins at* St. Martin, *but continues a whole month.*

Fairs or Marts in *Germany:*

Franckfort, *begins* 15 *days before* Easter, *continues* 5 *days.*
Liux, *begins a Week after* Easter, *continues* 8 *days.*
Argentina, *begins* June 25 *continues* 14 *days.*
Crembs, *begins* July 25, *continues* 8 *days.*
Liux, *begins* August 24, *continues* 8 *days.*
Franckfort, *begins* September 9, *continues* 15 *days.*
Salsberg, de S. Robert, *begins* Sept. 24, *continues* 15 *days.*
Clembles, *begins* October 18, *continues* 8 *days.*
Fuste, *begins* January 15, *continues* 10 *days.*

Three Fairs or Marts at *Bolsan.*
The *first begins at* Mid-Lent, *continues* 14 *days.*

The

The second begins September 1, *continues* 14 *days.*
The third begins the first sunti. after S. Andrew, *cont.* 25 *days.*

Fairs or Marts in *Spain.*

Villiabon, *begins the first day of* Lent, *continues all* Lent.
Rioseco, *begins* 3 *days after* Easter, *cont. till after* Pentecost.
Medina, del. Compo. *begins* November 1, *continues till* 8 *days before* Christmas.

Fairs or Marts in *Portugal.*

Lamotto, *begins* May 1, *continues* 15 *days.*
Beggia, *begins* August 15 *continues to that months end.*
Penella, *begins* September 29, *continues* 15 *days.*
Rossa *begins* August 15, *continues* 16 *days.*
Pennella, *begins* January 20, *continues* 15 *days.*

Fairs or Marts in *Cicily.*

Lentina, *begins* April 25, *continues* 8 *days.*
Messina, *begins* August 25, *continues* 20 *days.*
Cattina, *begins* August 15, *continues* 24 *days.*
Cartagiron, *begins* October 24, *continues* 15 *days.*
Piazza, *begins* October 28, *continues* 8 *days.*
Castro Gionane, *begins* November 13, *continues* 15 *days.*
Sarragozza, *begins* December 13, *continues* 15 *days.*
Pakermo *begins* May 1, *continues* 15 *days.*

Marts or Fairs in the Island of *Cyprus.*

Chilaco, *begins* December 29, *continues* 3 *days.*
San Demetrio, *begins* October 26, *continues* 3 *days.*
San Giorgio, *begins* November 2, *continues* 3 *days.*
S. Nicholas, *begins* December 6, *continues* 3 *days.*

Impiger extremos, curris Mercator, *ad* Indos.
Per Mare, *Per*iculum *fugiens*; *per* saxa, *per* Ignes.

The industrious *Merchant*, runs to'th' *Indian shore*,
Through *fire* and *water*, dreading to be *poor*.

Poscript.

POSCRIPT.

MY intent in the publication of this *Almanack*, is principally out of the respect which I bear to the Lovers of *Navigation* and *Traffique*, and as I have in this first Essay begun, so I shall continue *annually* to furnish it with New supplies of *Matter* and *tables* which cannot but be acceptable to all ingenious persons, whether *Merchants*, *Marriners*, *Travailers* or *Tradesmen*, for whose use I principally designed it, and to whom I freely offer it, hopeing that in a few years they may be accomodated with such a *Vade mecum*, or *Pocket-Companion*, as may be of dayly use unto them. Wherefore accept of this at first, and the next year expect new matter, till which time I bid thee

Farewel.

FINIS.

A-614.